

AMENDMENTS TO THE SPECIFICATION

IN THE WRITTEN DESCRIPTION

Please replace paragraph [0029] with the following amended paragraph:

[0029] The second drive unit ~~36-37~~ which effects linear reciprocating movement of the secondary support assembly ~~33-34~~ includes a drive motor 51 which is mounted on the primary support member 41. The drive motor 51, which may comprise an electrically-driven servomotor, has a driving pulley 52 fixed on the motor shaft, and effects driving of a drive belt 53 which in turn effects rotation of a driven pulley 54. Both the drive belt and the pulleys may be toothed if desired to provide greater control over the rotation. The driven pulley 54 is secured to a drive shaft 55, the latter being rotatably supported by bearings 56 which are mounted to the underside of the primary slide member 43. This rotary shaft 55 mounts thereon a driving wheel or gear 57, the latter being engaged with the upper surface 58, such as an elongate gear rack, which is fixed to the secondary slide member 47. Rotation of drive motor 51 thus causes the secondary slide member 47 to be linearly and, in the alternate embodiment, substantially horizontally slidably displaced.

Please replace paragraph [0031] with the following amended paragraph:

[0031] The drive motors 51 and ~~52~~61, both of which in the illustrated embodiment are reversibly rotatable, are energized and controlled by a suitable control unit (not shown) such as a microprocessor or the like, preferably a programmable unit so as to permit the controlling of the primary and secondary slides, such as controlling speeds, timing and magnitude of displacement, to be adjusted to provide optimum performance relative to the treating operation being carried out.

Please replace paragraph [0038] with the following amended paragraph:

[0038] When in a non-operational position, the slides and the nozzle assemblies mounted thereon will be positioned generally as illustrated in Figure 4, in which position, the nozzle member 71 is withdrawn from the workpiece W and the other nozzle member 71A is generally retracted from the treating chamber 13 so as to enable the turntable 14 to be rotated, such as through 180°, to move the workpiece from the exterior loading-unloading station to the interior treating station. When the workpiece is positioned in the treating station, then the drive motor 51 is energized so that nozzle 71A is moved inwardly into the treating station and into an access opening formed in the workpiece W so as to traverse the interior chamber thereof, as described in greater detail hereinafter, until the opposed nozzles 71 and 71A are disposed with their discharge openings 74 and 74A in closely adjacent but slightly spaced relationship. When in this position, the motor 51 is de-energized and thus independent linear displacement of secondary slide member 47 is prevented. Thereafter motor 61 is energized so that primary slide 43 is linearly slidably displaced, which in turn causes the secondary slide to move synchronously therewith, whereupon both nozzle assemblies are displaced transversely relative to the workpiece. The motor 61 can be alternately reversely energized to cause the primary slide member ~~44~~43, as well as the secondary slide member 47 carried thereon, to be linearly moved in a back-and-forth manner so that the tips of the nozzles effectively traverse, in a back-and-forth fashion, the interior chamber of the workpiece.

Please replace paragraph [0040] with the following amended paragraph:

[0040] In the workpiece W, such as a cast housing for a valve assembly employing multiple shiftable valve spools, the interior chamber 81 includes a main chamber portion 86 which

at opposite ends communicates with aligned access openings 82 and 83 as formed in the opposed side walls 84 and 85, respectively, of the workpiece. This main chamber portion 86 is surrounded by boundary walls 87. The interior chamber 81 also includes branch chamber portions ~~86-88~~ which project transversely from the main chamber portion ~~87-86~~ and hence are not directly accessible from the access openings 82-83. In the illustrated embodiment the interior chamber 81 of the workpiece includes a plurality of similar main chamber portions 86 which are disposed in sidewardly spaced relationship within the workpiece, and each of which is accessible through its own access openings 82-83, with branch chamber portions or passages 88 extending transversely between and providing flow interconnection between adjacent main chamber portions 86.

Please replace paragraph [0041] with the following amended paragraph:

[0041] With the arrangement illustrated in Figure 7, the pairs of opposed nozzle members 71, 71A are moved through a stroke which is selected based on the workpiece and the desired surface treatment operation, which stroke will typically substantially equal the length of the main chamber portion 86 or may extend from a position adjacent the outer end of one access opening 82 to a position adjacent the outer end of the other access opening 83 if treatment of the access openings is desired. The nozzle members may be synchronously linearly moved back and forth through a selected number of cycles due to reciprocating movement of the primary slide member 43 caused by driving rotation of the motor 61. During this back-and-forth movement, the pressurized blasting media is supplied to each opposed pair of nozzle members 71-71A, each of which emits from the respective discharge opening a generally confined high-velocity stream 91, as defined by the high-velocity carrier fluid (such as gas or liquid) having small solid abrasive particles entrained therein. Due to the

opposed and close proximity of the discharge openings of the opposed nozzle members, the two streams 91 are directed toward one another and directly violently impact one another shortly after discharge from the respective nozzle members, which impact causes the streams of blasting media to be deflected radially outwardly in a rather confined annular pattern 92 which surrounds the discharged streams 91, with the blasting media in this annular pattern still being at high velocity so that the blasting media and specifically the abrasive particles entrained therein are impacted against the surrounding boundary walls of the main chamber portion 86. Due to the synchronized linear movement of the opposed nozzles 71 and 71A, the radial stream pattern 92 is progressively moved linearly along the boundary wall so as to effect cleaning and treating thereof due to the impacting of the abrasive media thereagainst. At the same time, this movement of the nozzles and of the radial stream pattern 92 causes the high velocity blasting media to enter into the transverse chambers or passages 86-88 so as to flow therethrough so as to effect cleaning and treating of the boundary walls thereof. The flow of the blasting media into these transverse passages 88 results in impingement of the high velocity blasting media against the side walls of the branch passages 88 due to the somewhat random orientation of the blasting media as it is deflected outwardly, and additionally due to the movement of the nozzle members and the corresponding translation of the annular spray pattern 92 along the main chamber portion 86 in response to the nozzle member movement. In addition, in situations where additional treatment of branch passages or enlargements along the main passage is desired, the timing and/or speed of movement of the nozzle members can be appropriately programmed to permit the nozzle members to either momentarily pause and/or move at a slower rate so as to provide more intensive surface treatment at selected locations along the travel path.

Please replace paragraph [0059] with the following amended paragraph:

[0059] The transverse shifting mechanism 151 includes a driving unit 157, preferably ~~in an~~ extendable/contractable fluid pressure cylinder, the latter having its housing 158 secured to the support track 156. The piston rod 159 of the pressure cylinder 157 projects outwardly from the housing generally parallel to the elongate direction of the support track 156, and the remote or free end of the piston rod 159 is connected to the carriage 153 so as to control the reciprocating movement thereof lengthwise along the support track 156.

Please replace paragraph [0061] with the following amended paragraph:

[0061] In addition, the speed controller 148 as briefly discussed above is defined by a plurality of individual speed control panels or tracks as designated 165A, 165B and 165C, each having a timing track 166 extending longitudinally along an edge thereof and positioned for cooperation with the follower or sensor 149. The individual speed control tracks or panels 165A through 165C are disposed in parallel but spaced transverse relationship relative to the direction of nozzle movement, and in particular are transversely spaced so that when the follower ~~149-161~~ associated with the shifting mechanism support 152 is ~~respectfully~~ respectively engaged in the slots 163A, 163B and 163C, the follower 149 as provided on the nozzle support 133 is positioned for engagement with the speed control panels 165A, 165B and 165C respectively.

Please replace paragraph [0067] with the following amended paragraph:

[0067] The rightward end of pressure cylinder 143A is then energized so as to pull the support 134 inwardly (i.e. ~~rightwardly~~ leftwardly) until the carriage 136A abuts the stop

surface 146. During this inward pulling of the support 134, the nozzle 171A projects into and traverses along the length of passage 81A and, upon contact with the stop surface 146, the nozzle tip 174A is disposed closely adjacent and is spaced from the opposed nozzle tip 174 by a very small gap, typically in the range of .100 to .300 inch. The rightward end of drive cylinder 142A is then connected to exhaust, and the leftward end of drive cylinder 142 is energized so as to drive the support 133 rightwardly along the track 139, thereby causing the nozzle 171 to enter into and pass lengthwise along the interior passage 81A. During this latter movement, the engagement of the stop surface 146 against the abutment surface 147 on carrier 136A causes the nozzle member 171A to move synchronously with the nozzle 171 along the length of the passage 81A while maintaining the predefined gap between the opposed nozzle tips 174 and 174A.